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BEFORE THE ARIZONA CORPORATION COMMISSION

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Arizona Corporation Commission

AZ CORP COMMISSION
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IN THE MATTER OF THE GENERIC
INVESTIGATION OF THE DEVELOPMENT OF A)
RENEWABLE PORTFOLIO STANDARD AS A)
POTENTIAL PART OF THE RETAIL ELECTRIC)
COMPETITION RULES.)

NOTICE OF FILING
ATTACHMENTS

The Arizona Clean Energy Industries Alliance ("ACEIA"), hereby files attachments to
the rebuttal testimony of Robert C. Paladino.

RESPECTFULLY SUBMITTED this 9th day of September, 1999.

MARTINEZ & CURTIS, P.C.

By

Paul R. Michaud
2712 North Seventh Street
Phoenix, Arizona 85006-1090
Attorneys for the Arizona Clean
Energy Industries Alliance ("ACEIA").

The original and ten (10) copies of
the foregoing are filed this 8th
day of September, 1999 with:

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Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007



INDUSTRIAL SOLAR TECHNOLOGY CORPORATION
4420 McINTYRE STREET GOLDEN, COLORADO 80403 TELEPHONE (303) 279-8108

August 13, 1999

Mr. A. H. Bellac
York Research Corp.
280 Park Ave., Suite 2700 W
New York, NY 10017

Dear Mr. Bellac:

I understand that 100 MW of solar power would be required by the year 2001, in order to meet the 0.4% solar content required in the proposed renewable portfolio standard.

Based on the performance of our parabolic trough system at the Federal Correctional Institution in Phoenix, the thermal output of the SEECOT solar collector system would average about 0.47 kW per square meter of aperture area. You have informed me based on such performance, that your SEECOT system would require 80,000 square meters of collectors to satisfy the 100 MW requirement of solar electricity, assuming an average extra credit of 1.0 because of local manufacture and early start up.

This letter is to inform you that we can deliver and install this quantity of solar collectors in Arizona within 18 months of receipt of purchase orders and financing.

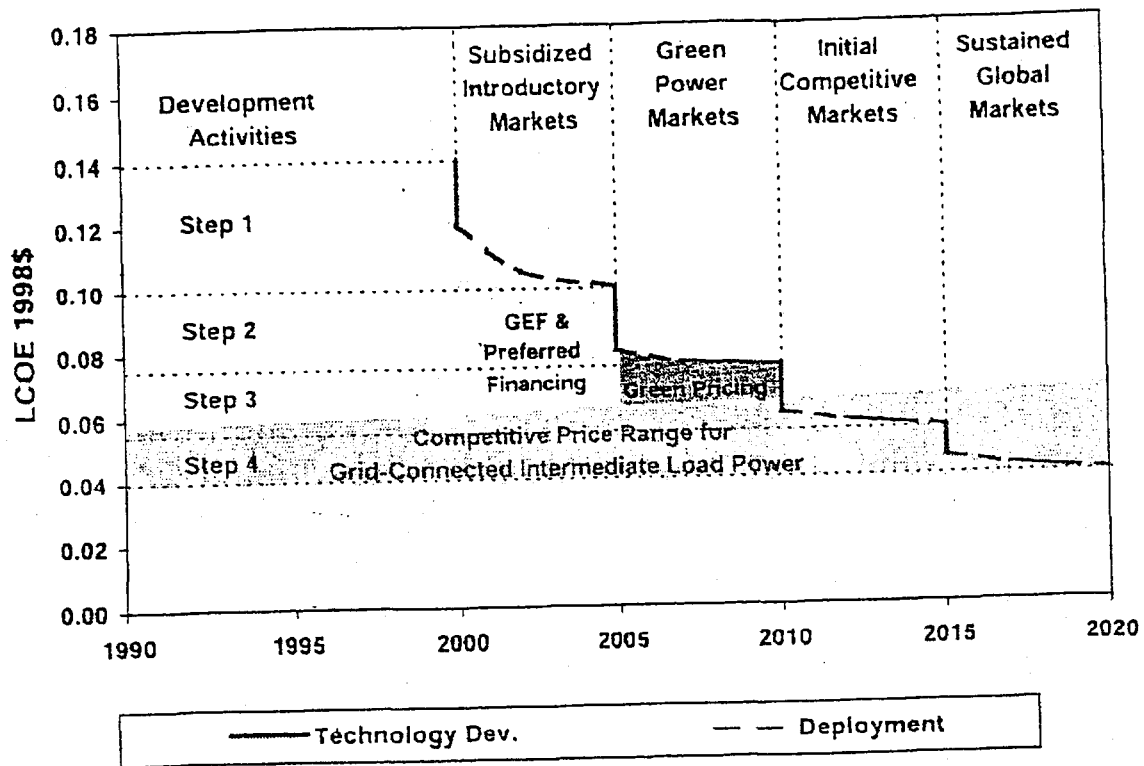
The solar equipment will be fabricated in Arizona and will contain a high percentage of material and labor from Arizona sources.

Sincerely,

E. Kenneth May
President
INDUSTRIAL SOLAR TECHNOLOGY

January 1999

Parabolic-Trough Technology Roadmap



Trough technology development steps and cost vs. market opportunities

**YORK RESEARCH
IMPACT OF SOLAR POWER ON THE
COMPOSITE COST OF GENERATING
POWER IN ARIZONA**

Below is York Research's estimate of the impact of complying with the Solar Portfolio Standard on the composite cost of generating electricity in Arizona. The estimate is based on the following assumptions:

- 1) In order to satisfy the new Solar Portfolio Standard (now called the Renewable Energy Standard), 0.4% of all power supplied in Arizona is assumed to be solar power;
- 2) The 0.4% solar power content consists half of actual solar power and half of extra solar credits consisting of "early start credits", "Arizona installation credits", "Arizona fabrication credit", etc.;
- 3) Since the extra solar credits exist only as a "bookkeeping" mechanism to give ESPs additional incentives to install solar power, the half of the solar energy requirement compliance provided in the form of extra solar credits must in reality be supplied by non-solar power; and
- 4) A unit cost for solar power of 30 cents/kWh and a unit cost of non-solar power of 3 cents/kWh

Using the above ground rules and an assumed "reference" amount of power that an ESP must supply of 1,000,000 MWhs annually results in the following impact on the average cost of power in Arizona:

- a) 1,000,000 MWh's of real power must be supplied annually to the electric customers;
- b) 99.6% of that amount (or 996,000 MWhs) is supplied by non-solar power;
- c) 0.4% of that amount (or 4,000 MWhs) is provided in the form of solar power (to satisfy the Solar Portfolio Standard);
- d) However, although the ESP is paying for 4,000 MWh's of solar power, only 2,000 MWh's of real power are generated. Therefore, in order to make-up this shortfall with real power that can be supplied to the electric customers, the ESP must purchase or generate an additional 2,000 MWh's of non-solar power;

- e) Consequently, in order to supply the electric customers with 1,000,000 MWh's of actual power, the ESP must purchase or generate:

996,000 MWh's of non-solar power (at 3 cents/kWh)
+
4,000 MWh's of solar power (at 30 cents/kWh)
+
2,000 MWh's of non-solar power (at 3 cents/kWh) to provide
actual power to cover the "non-existent" extra solar credit power

Thereby yielding:

1,002,000 MWh's of power that must be paid for in order to supply
the actual 1,000,000 MWh power demand

- f) Thus, if the current average cost of power (without the Solar Portfolio Standard and without any solar power) is 3 cents/kWh, the composite cost of power including compliance with the 0.4% requirement of the Solar Portfolio Standard amounts to:

$$\begin{aligned} & [(996,000 \text{ MWh} \times 3 \text{ cents/kWh}) \\ & + (4,000 \text{ MWhs} \times 30 \text{ cents/kWh}) \\ & + (2,000 \text{ MWhs} \times 3 \text{ cents/kWh})] / (1,000,000 \text{ MWhs}) = \end{aligned}$$

3.114 cents/kWh which amounts to only a 3.8% increase in the current cost of generating power and an even smaller percentage increase when the additional costs of delivering power to the customers is included.

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